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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,319	02/21/2002	Geun Su Lee	30205/38088	8187 5

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EXAMINER
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THORNTON, YVETTE C

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 10/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/080,319

Applicant(s)

LEE ET AL.

Examiner

Yvette C. Thornton

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1) ☒ Responsive to communication(s) filed on 9/8/03.

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

4) ☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) 11-18 and 25-31 is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1-8, 10 and 19-24 is/are rejected.

7) ☒ Claim(s) 9 is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 21 February 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some \* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.

4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other:

### DETAILED ACTION

This is written in reference to application number 10/080319 filed on February 21, 2002 and published as US 2003/0022101 A1 on January 30, 2003.

#### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### *Drawings*

2. The drawings are objected to because they are too dark. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

#### *Election/Restrictions*

4. Applicant's election with traverse of claims 1-10 and 19-24 in Paper No. 4 is acknowledged. The traversal is on the ground(s) that the Office action fails to demonstrate that a serious burden would be placed on the examiner if the election were not required. This is not found persuasive because while a complete search of the claimed product would include a determination of whether the claimed composition has been previously used or made, it does not limit the examiner to any given method of making or method of using as set forth in the non-elected groups. The examiner reserves the right to rejoin the process claims if the product claims as found to be allowable. Groups I-IV each have acquired separate status in

the art as shown by their different classification, restriction for examination purposes as indicated in Paper No. 3 is proper. The search required for each group is different. In addition each individual search encompasses not only the subclass that the invention is classified in, but numerous other subclasses.

5. The applicant also claims that restricting the application places an undue financial burden on the applicant. This argument is not found persuasive because the MPEP does not provide for a connection between applicant's financial issues and criteria for a proper restriction requirement. According to the MPEP 803 there are two criteria for a proper restriction requirement between patently distinct inventions, (1) the inventions must be independent or distinct as claimed and (2) there must be a serious burden on the examiner if the restriction is not required. With both of the criteria having been met, the requirement is still deemed proper and is therefore made **FINAL**.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 as written refers to polymers containing "hexafluorocyclobutene" and "octafluorocyclopentene". The examiner is of the position that when the monomer has been polymerized to form a polymer, the double bond is no longer present and the correct terms should be hexafluorocyclobutane and octafluorocyclopentane.

The examiner is unclear if the applicant is claiming the presence of a double bond in the claimed polymer. Clarification is requested.

### *Claim Interpretations*

8. Claims 5-10 as written does not required the presence of claimed monomer units "b" and "c" (i.e.,  $b=0$ ,  $c=0$ ). The claim however does not allow for a homopolymer of the claimed monomer. It is the examiner's position that the limitations of instant claims 6-10 are meet by a copolymer comprising a monomer of repeating unit "a" and any other monomeric unit. It is also the examiner's interpretation that the limitations of instant claim 10 are met when a repeating unit of formula 2 is chosen and the limitations of instant claim 9 are met when a repeating unit of formula 3 is chosen.

### *Claim Rejections - 35 USC § 102*

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Akama et al. (US 6403744 B1). Akama exemplifies in example 6 the synthesis of a copolymer comprising 30 grams of octafluorocyclopentene and 64 grams of vinylidene fluoride (c. 12, l. 13-36).

The use of octafluorocyclopentene clearly anticipates the limitations of instant claims 1-3. It is the examiner's position that the said copolymer meets the limitation of instant claims 5-8 wherein  $b=0$ ,  $c=0$  and "a" is approximately 32 %  $(30/(30+64)*100)$ .

11. Claims 1-8, 10, 19, 22 and 24 are rejected under 35 U.S.C. 102(a) as being anticipated by Otani et al. (JP 2001-330955 A, machine translation and spot translation). Otani exemplifies in example 5 a polymer comprising octafluorocyclopentene (OFCPE), vinyl acetate, 3,3,3-trifluoro 2-trifluoromethyl propene and t-butyl acrylic acid [48:26:12:14] (see p. 0057 Table 1, based on spot translation from Translation Department of USPTO). It is the examiner's position that t-butyl acrylic acid meets the limitations of claimed monomer "c" of formula 2 wherein  $R_4$  is a t-butyl group. Otani further teaches that the exemplified polymer is dissolved in acetic acid n-butyl, admixed with 8 weight% of the acid generator triphenylsulfonium triflate to form a resist solution (see p. 0062-0064).

#### *Claim Rejections - 35 USC § 103*

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 20-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani et al. (JP 2001-330955 A, machine translation and spot translation) as applied to claims 1-8, 10, 19, 22 and 24 above. Otani teaches all the limitation of the claims as discussed above, except it fails to exemplify the acid generators of instant claim 20. Otani

does however teach that there is especially no limit about the photoacid generator used in the taught invention. Suitable examples include diazomethanes; nitrobenzyl derivatives such as p-toluenesulfonic acid 2,6-dinitro benzyl; sulfonates; onium salts; and benzoin tosylates (p. 0038-0047). The said acid generator may be used independently or in a combination of two or more. The content is chosen in the range of 0.5-20 weight percent (p. 0048). It would have been obvious to one of ordinary skill in the art, in light of the above disclosure, to use a combination of acid generators in the exemplified compositions such as triphenylsulfonium triflate (see examples) and p-toluenesulfonic acid 2,6-dinitro benzyl (i.e., dinitrobenzyltosylate).

14. Otani also fails to exemplify an organic solvent set forth in instant claim 23. Otani teaches that suitable solvents for the taught components include cyclohexanone, 2-heptanone, ethyl lactate, butyl acetate and propylene monochrome acetate (p. 0049). These solvents may be used independently or in combination of two or more. One of ordinary skill in the art would have been motivated by the teachings of Otani to substitute any of the taught solvents such as cyclohexanone, 2-heptanone, ethyl lactate and propylene monochrome acetate for the exemplified butyl acetate because Otani teaches that they are all equivalents.

***Allowable Subject Matter***

15. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter: review of the prior art failed to teach and/or suggest polymer as set forth in instant claim 9.

*Conclusion*

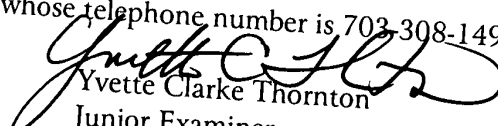
17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hatakeyama et al. (US 2002/0004569 A1) pertaining to polymer, chemically amplified resist composition and patterning process.
- Sekiya et al. (US 6403846 B1) pertaining to fluorinated saturated hydrocarbons (see c. 4, l. 33-41).
- Olson et al. (US 6261676 B1) pertaining to amide functional UV light absorbers for fluoropolymers (see c. 6, l. 63).
- Koishi et al. (US 4609715 A) pertaining to copolymer of fluoromethacrylate with styrene or its derivative and method of preparing the same.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 703-305-0589. The examiner can normally be reached on Monday-Thursday 8-6:30.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet C. Baxter can be reached on 703-308-2303. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

20. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1495.

  
Yvette Clarke Thornton  
Junior Examiner  
Art Unit 1752

September 23, 2003